Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2018-03-19-12** **Date: 22-03-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP,
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	19-03-18
Sample ID No	:	2018-03-19-12 /01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	20-03-18
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

SL.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.45	–
2	Finess by Air permeablity method (m^2/kg,Min)	287.4	225m^2/kg, Min
3	Density (gm/cc)	3.13	–
4	Standard Consistency (%)	27.5%	Not specified
5	Initial Setting time	150 minutes	Not less than 30 minutes
6	Final Setting time	250 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1mm	Not more than 10 mm

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2018-03-19-12** **Date: 21-03-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	19-03-18
Sample ID No	:	2018-03-19-12 /02(a)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	19-03-18

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	245	245	1.6	98.4	90-100
3	20 mm	5644	5889	39.3	60.7	30-70
4	10 mm	4566	10455	69.7	30.3	10-35
5	4.75 mm	4288	14743	98.3	1.7	0-5
6	Pan	257	15000	100.0	0	---

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Format No: CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID	:	CP-2018-03-19-12 Date: 21-03-18
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	19-03-18
Sample ID No	:	2018-03-19-12 /02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	19-03-18

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	256	256	5.1	94.9	90-100
3	10 mm	2456	2712	54.2	45.8	25-55
4	4.75 mm	1889	4601	92.0	8.0	0-10
5	Pan	399	5000	100	0	-

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TEST REPORT OF FINE AGGREGATE

Lab ID	:	**CP-2018-03-19-12**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	19-03-18
Sample ID No	:	2018-03-19-12 /03
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	19-03-18
Total weight taken	:	1000 grams

Date: 21-03-18

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	86	86	8.6	91.4	90-100	90-100	90-100	95-100
3	2.36 mm	156	242	24.2	75.8	60-95	75-100	85-100	95-100
4	1.18 mm	166	408	40.8	59.2	30-70	55-90	75-100	90-100
5	600 micron	178	586	58.6	41.4	15-34	35-59	60-79	80-100
6	300 micron	185	771	77.1	22.9	5-20	8-30	12-40	15-50
7	150 micron	156	927	92.7	7.3	0-10	0-10	0-10	0-15
8	Pan	73	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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Format No: CP/TF/01

TEST RESULTS OF STEEL

Lab ID	:	**CP-2018-03-19-12**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore. **Date: 21-03-18**
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	19-03-18
Sample ID No	:	2018-03-19-12 /04
Sample Type	:	Sunvik
Reference to BIS codes	:	IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
Date of test:	:	20-03-18

SLNo	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Sunvik	Fe500	10	0.612	528	615	21.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	12	0.885	535	642	21.0%	Satisfactory	Satisfactory
3	Sunvik	Fe500	12	0.884	563	672	19.0%	Satisfactory	Satisfactory

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TEST REPORT OF PRECAST COVER SLAB

Date: 24-03-18

Lab ID	:	CP-2018-03-19-12
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	19-03-18
Sample ID No	:	2018-03-19-12 /05
Sample Type /Size	:	100mm thick Precast Cover Slab
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test	:	20/03/2018

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.52	100.51	1.249	4478	98.1	21.9	20.4	25.5
2	Cover Slab-2	75.51	100.49	1.253	4477	99.7	22.3	20.7	25.9
3	Cover Slab-3	75.49	100.48	1.248	4475	97.8	21.9	20.3	25.4

Note:

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Certificate No.: TC- 5548

TEST REPORT OF CEMENT CONCRETE CUBES

Format No: CP/TF/01

Date: 26/04/2018

Lab ID	:	CP-2018-03-31-20
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	31-03-18
Sample ID No	:	2018-03-31-20 /02
Customer ID	:	RCC
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	26/04/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	RCC	M20	29/03/2018	26/04/2018	149.11 X 151.23 X 149.65	22550	8.159	520.9	23.1	23.0
2	RCC	M20	29/03/2018	26/04/2018	150.37 X 15.42 X 150.63	2319	8.176	52.6	22.7	
3	RCC	M20	29/03/2018	26/04/2018	150.49 X 150.11 X 150.47	22590	8.205	521.8	23.1	

Note:
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TEST REPORT OF CEMENT CONCRETE CUBES

Format No: CP/TF/01

Date: 05/04/2018

Lab ID	:	CP-2018-03-31-20
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	31-03-18
Sample ID No	:	2018-03-31-20 /03
Customer ID	:	RCC
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	05/04/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	RCC	M20	29/03/2018	05/04/2018	149.85 X 149.85 X 151.22	22455	8.152	388.5	17.3	17.7
2	RCC	M20	29/03/2018	05/04/2018	150.35 X 150.49 X 150.32	22626	8.324	409.5	18.1	
3	RCC	M20	29/03/2018	05/04/2018	149.72 X 151.85 X 150.38	22735	8.208	402.4	17.7	

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TEST REPORT OF CEMENT CONCRETE CUBES

Format No: CP/TF/01

Date: 05/04/2018

Lab ID	:	CP-2018-03-31-20
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	31-03-18
Sample ID No	:	2018-03-31-20 /05
Customer ID	:	RCC
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	05/04/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	RCC	M20	29/03/2018	05/04/2018	148.90 X 151.05 X 150.32	22491	8.166	407.1	18.1	17.5
2	RCC	M20	29/03/2018	05/04/2018	150.78 X 150.33 X 149.22	22667	8.154	394.4	17.4	
3	RCC	M20	29/03/2018	05/04/2018	148.19 X 151.32 X 151.90	22424	8.143	383.5	17.1	

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2018-03-26-24** **Date: 28-03-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	26-03-18
Sample ID No	:	2018-03-26-24/01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	26-03-18
Oven Dry Weight	:	10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	315	315	3.2	96.9	95-100
22.4	2259	2574	25.7	74.3	60-80
11.2	2179	4753	47.5	52.5	40-60
4.75	2251	7004	70.0	30.0	25-40
2.36	1490	8494	84.9	15.1	15-30
0.6	600	9094	90.9	9.1	8-22
0.075	906	10000	100.0	0.0	0-5

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2018-03-26-24**
		Date: 28-03-18
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	26-03-18
Sample ID No	:	2018-03-26-24/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	26-03-18

SLNo	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.2	300.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.4
5	Aggregate impact value	(B/A)*100	24.6	24.7
6	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

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TEST RESULTS OF GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2018-04-02-29**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore. **Date: 04-04-18**
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-04-18
Sample ID No	:	2018-04-02-29/01
Type of Mix	:	DBM-Plant (Dense Bituminous Macadam)
Date of test	:	02-04-18
Weight of Sample	:	5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10 (grading -2)
37.5	0	0	0	100	100
26.5	172	172	3.44	96.56	90-100
19	1013	1185	23.70	76.30	71-95
13.2	520	1705	34.10	65.90	56-80
4.75	1150	2855	57.10	42.90	38-54
2.36	680	3535	70.70	29.30	28-42
0.3	950	4485	89.70	10.30	7-21
0.075	272	4757	95.14	4.86	2-8
PAN	243	5000	0.00	0	0

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Certificate No.: TC- 5548

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR DENSE BITUMINOUS MACADAM

Lab ID	:	**CP-RW-2018-04-02-29**
Customer	:	**Date: 05-04-18**
Address	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Yelahanka Sub division, BBMP, Bangalore.
		Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-04-18
Sample ID No	:	2018-04-02-29/01
Type of Mix	:	DBM (Dense Bituminous Macadam)
Date of test	:	02-04-18

Table 500-6 : Physical Requirements fo Coarse Aggregate for Dense Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	14.1	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	13.2		
Strength	Aggregate Impact Value	20.2	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.6	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	1.4	Maximum 2%	IS:2386 Part III

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2018-04-02-29** **Date: 05-04-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	02-04-18
Sample ID No	:	2018-04-02-29/01
Type of Mix	:	DBM (Dense Bituminous Mecadam)
Date of test	:	02-04-18

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
2	Marshal flow at 60°C, mm	3.54	3.87	2-4
3	Percent air Voids	4.56	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
6	Density, g/cc	2.42	2.40	–

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2018-04-02-29** **Date: 05-04-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-04-18
Sample ID No	:	2018-04-02-29/01
Type of Mix	:	DBM(Dense Bitumnous Macadam)
Date of test	:	02-04-18

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2018-04-05-16**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore. **Date: 07-04-18**
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	05-04-18
Sample ID No	:	2018-04-05-16/01
Type of Mix	:	BC-Plant (Bituminous Concrete)
Date of test	:	05-04-18
Oven Dry Weight	:	5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	300	300	6.0	94.0	90-100
9.5	450	750	15.0	85.0	70-88
4.75	1200	1950	39.0	61.0	53-71
2.36	150	2100	42.0	58.0	42-58
1.18	550	2650	53.0	47.0	34-48
0.6	450	3100	62.0	38.0	26-38
0.3	600	3700	74.0	26.0	18-28
0.15	600	4300	86.0	14.0	12-20
0.075	250	4550	91.0	9.0	4-10
PAN	450	5000	100	0.0	0

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2018-04-05-16**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore. **Date: 09-04-18**
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	05-04-18
Sample ID No	:	2018-04-05-16/01
Type of Mix	:	BC(Bitumenous Concrete)
Date of test	:	05-04-18

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	99.1	0.9	98.2	Minimum Retained Coating 95%
2	97.8	2.2		
3	97.6	2.4		

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TESTS RESULTS ON STABILITY OF MIX

Lab ID : **CP-RW-2018-04-05-16**

Customer : Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore. **Date: 09-04-18**

Address : Yelahanka Sub division, BBMP, Bangalore.

Project Name : Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.

Agency : Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore

Customer Reference : EE(YNK.D)E-PMT-02/W.O/44/2017-18

Source of Sample : Hot Mix Plant, Bangalore

Sample Condition : Satisfactory

Date of Receipt : 05-04-18

Sample ID No : 2018-04-05-16/01

Type of Mix : BC (Bituminous Concrete)

Date of test : 05-04-18

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	14.73	13.43	10KN(min)
2	Marshal flow at 60°C, mm	3.08	3.75	2-4
3	Percent air Voids	5.63	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	13.82	14.73	13-15
5	Percent Voids filled with Bitumen(VFB %)	67.09	65.20	65-75
6	Density, g/cc	2.25	2.26	–

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DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID	:	**CP-RW-2018-04-11-12** **Date: 12-04-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Consultants	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	11-04-18
Sample ID No	:	2018-04-11-12/01
Type of Mix	:	Tack coat
Date of test	:	11-04-18

SLNo	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.78	0.748
4	Final weight of plate after application of tack Coat (c)	Kg	0.803	0.771
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

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TEST REPORT ON BITUMEN

Lab ID	:	**CP-2018-03-29-03** **Date: 30-03-18**
Customer	:	Assistant Executive Engineer, Yelahanka Sub division, BBMP, Bangalore.
Address	:	Yelahanka Sub division, BBMP, Bangalore.
Project Name	:	Improvements and Asphalting to roads at Shivanahalli in Ward No.01 of Yelahanka Sub Division.
Agency	:	Sri.B.R.Dananjaya, No.22, Gundappa Road, 3rd Cross, Floor mill road, Nagashettyhalli, Bangalore
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/44/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	29-03-18
Sample ID No	:	2018-03-29-03/01
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	29-03-18

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	64	60 to 70
2	Softening Point, °C	51.2	Min. 40°C
3	Ductility, cm	98	Min. 75cm
4	Flash point, °C	245	Min. 220°C
	Fire point, °C	272	

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